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Leveling the Hierarchy:
Levels of War in the Information Age

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

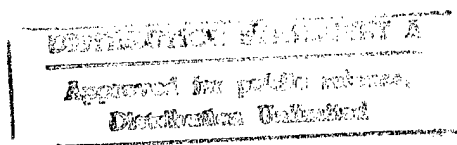
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Abstract

Advances in weapons accuracy and delivery systems as well as steadily improving command and control technologies have changed the nature of warfare. Information age warfare utilizes smaller forces wielding precision weapons over large distances. The result is a de-massification of warfare, where massing of forces is replaced with massing of effect, and tactical units have vastly expanded operational reach. This empowers individual warfighters and small tactical units, merging the traditional hierarchy of levels of war. In many cases, discrete tactical actions will be synchronized and combined with superior battlespace awareness to directly affect strategic objectives. Commanders will find themselves working on multiple levels simultaneously and contemplating single discrete actions aimed at strategic level objectives. The linear hierarchy of strategy, operations, and tactics must be re-examined and adapted to accurately reflect the non-linear battlespace of the information age. A model must be adopted that accounts for the growing asymmetry of battle and accommodates the increasing operational reach of small, highly mobile and dispersed units.

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Introduction

The United States military continues its race toward the twenty-first century, embracing information age technologies and searching for a technological panacea that will make war less costly and more efficient. Information technologies have increased precision of weapon systems, extended the operational reach of tactical units, and improved command and control at all levels of warfare. But information age¹ warfare encompasses more than just improved instruments of war. Information and its associated technologies influence military operations in a fundamental way. Just as businesses must re-organize and seek new models to survive in the information age, the military must examine the doctrinal underpinnings of warfare in order to successfully wage war in the coming century.

The growth of information-based weapon systems, command and control technologies, and communications has spawned a healthy debate within the military community. Much of the discussion focuses on whether we are experiencing a revolution in military affairs or merely the next evolutionary step in modern warfare. This debate often focuses on exploitation of technologies within the existing conceptual framework of warfare. Those in the RMA camp contend that information age technology reduces the fog of war, increases battlefield awareness and gives the "information-enabled" force a comparative advantage over a traditional, industrial age force. Proponents of the evolution theory credit only incremental improvements in weapons systems, sensors and communications systems

¹ The information age, or "third wave" civilization, is based on information and the creation and exploitation of knowledge. By way of contrast, "first wave" civilization is characterized by an attachment to the land, essentially agrarian economies. "Second wave," or industrial age, societies focus on production of goods. See Alvin and Heidi Toffler's *The Third Wave* (New York: Bantam, 1980) and *War and Anti-War* (New York: Warner Books, 1993) for detailed discussion.

and contend that perceived advantage quickly diminishes as the technology proliferates to potential enemies.

Whether revolutionary or evolutionary, clearly information age technology is exerting a profound influence on modern warfare. The resulting “knowledge-based warfare”² enables smaller forces to control increasingly lethal power and to project that power over larger areas than ever before. Thus, tactical commanders are empowered with a degree of influence historically exercised at a higher echelon. At the same time, improvements in communications and information displays give higher headquarters greater situation awareness and the ability to control tactical actions with a precision unheard of in the past.³ This has significant implications for the centralized planning, decentralized execution paradigm currently in use. This model of war based on a chain-of-command hierarchy that served so well during the industrial age merits re-examination and adaptation to remain effective in the information age.

The “Levels of War” Model

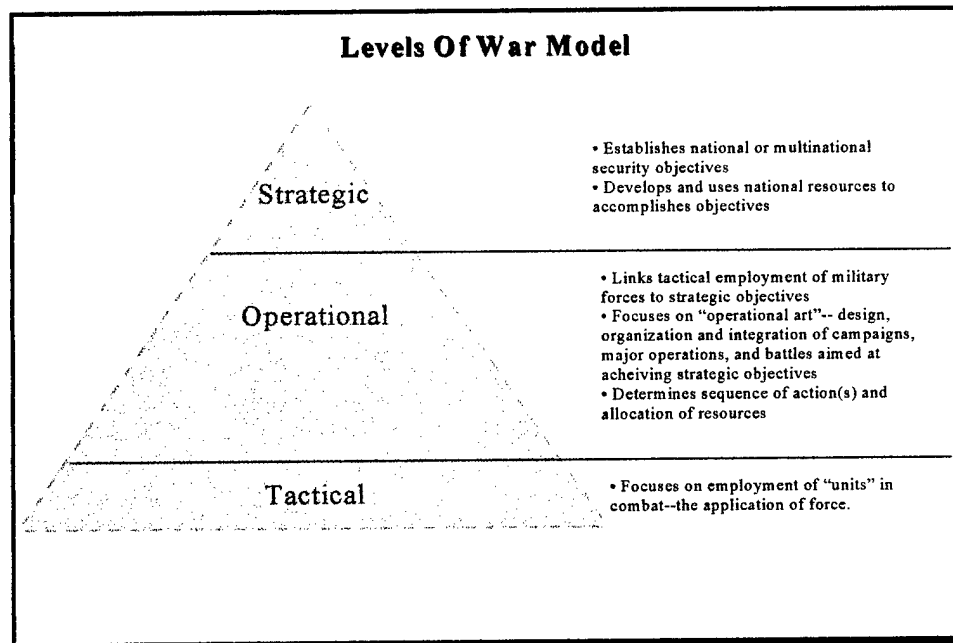
The current model of war uses three “levels of war”— strategic, operational, and tactical — to describe the interaction between policy and military action on the battlefield. **“The levels of war are doctrinal perspectives [emphasis in original] that clarify the links**

² “Knowledge-based warfare is a process that provides superior situation awareness of the battlespace, allowing us to decide at a faster pace than an enemy. It enables us to leverage our battlespace knowledge to achieve discrete effects through precision employment of combat power.” Lawrence E. Caspar et al, “Knowledge-Based Warfare: A Security Strategy for the Next Century,” *Joint Force Quarterly*, Autumn 1996.

³ Chairman of the Joint Chiefs of Staff, *Joint Vision 2010* (Washington, DC, 1996), p. 15.

between strategic objectives and tactical actions.”⁴ While the levels are not associated with a particular size of force or echelon of command, the model imposes a hierarchy of war linking national policy and objectives with force deployment, campaign planning and, finally, the tactical application of force. The levels of war help commanders “visualize a logical flow of operations, allocate resources and assign tasks.”⁵

Figure 1. Levels of War



This three-tiered model accurately reflects industrial age warfare. Prior to the advent of mass armies, a two-tiered model adequately described the range of warfare. Strategy dealt with broad questions of policy, the conduct of war and the raising of armed forces. Tactics covered the actually fighting of battles. It was in the nineteenth century that a requirement for a third level arose.

The creation of mass armies and the industrial revolution...which vastly extended the range of weapons and means of transport, gave rise to battles of great spatial scope and long duration. Whilst the operations of

⁴ Joint Pub 3-0, *Doctrine for Joint Operations*, (1 February 1995), p. II-1.

⁵ Ibid., p. II-2.

such armies were not 'strategic,' in that their objectives were purely military and directly aimed at the defeat of the other in battle, they were clearly more than tactical.⁶

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Some nations use the term “grand tactics” to describe this intermediate level between strategy and tactics. It was the Germans who first used the term “operativ” —operational— during World War I. The operational level of war and its associated “operational art” have assumed an increasingly dominant role in warfare ever since.

The levels of war provide a linear, hierarchical framework for formulation of requirements (strategic level), planning for the allocation of resources to meet those requirements (operational level) and executing the plan (tactical level). Just as the industrial society seeks to maximize production for a given level of resources, the industrial age military seeks to use resources efficiently and effectively to maximize destruction of the enemy. At the operational level, the commander focuses on deployment, maneuver, and synchronization of forces in order to maximize (mass) combat power at a decisive point. The tactical commander then executes the plan and actually applies the combat power. This concept of “centralized planning, decentralized execution” is central to U.S. military operations. As we will see, it is also a concept that may require critical review as the implications of advance technologies permeate the force.

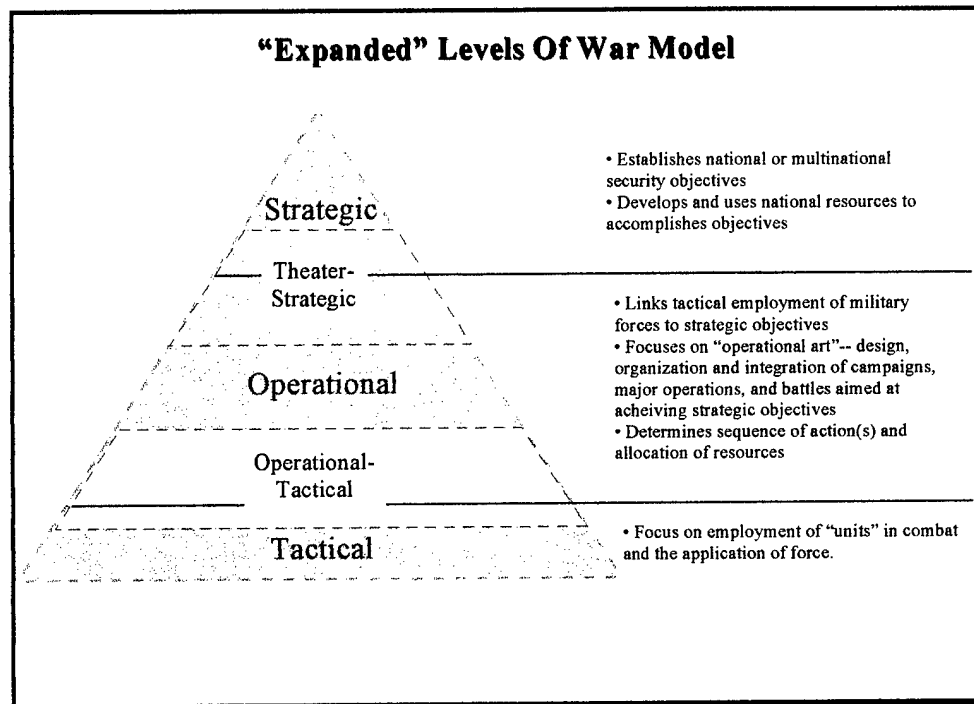
Expanding the Levels of War

Joint doctrine has already begun to acknowledge weakness in the levels of war model:

⁶ Chris Bellamy, *The Future of LAND WARFARE*, (New York: St. Martin's Press, 1987), p. 105.

*Advances in technology, information age media reporting, and the compression of time-space relationships contribute to the **growing interrelationships between the levels of war**. The levels of war help commanders visualize a logical flow of operations, allocate resources, and assign tasks to the appropriate command. However, commanders at every level must be aware that in a world of constant, immediate communications, any single event may cut across the three levels.*⁷

Figure 2. “Expanded” Levels of War



The traditional definitions of and distinctions among the three levels of war are being challenged by advances in technology. Recognizing this trend, some have added two additional “levels” to the standard three-tiered model. The “theater-strategic” and “operational-tactical” levels describe the expanding responsibilities of the operational commander. A theater commander, who traditionally operates at the operational level of

⁷ Joint Pub 3-0, p. II-2.

war, now actively participates in the formulation of national, allied and coalition strategy. This ensures that theater strategy reflects national strategy and accurately links operational activities to strategic objectives.

Similarly, the operational commander is becoming increasingly active at the tactical level of war. This is primarily a result of improvements in communications technology and reliability between tactical units and higher echelons. It also reflects a leveling of the hierarchy of war (as the operational assumes both strategic and tactical level responsibilities) and the beginnings of a shift in the balance between centralized planning and decentralized execution.

Implications of Technological Advances

*This era will be one of accelerating technological change. Critical advances will have enormous impact on all military forces. Successful adaptation of new and improved technologies may provide great increases in specific capabilities. Conversely, failure to understand and adapt could lead today's militaries into premature obsolescence and greatly increase the risks that such forces will be incapable of effective operations...*⁸

Joint Vision 2010 cites four technological trends that will shape the future of warfare:

- ◆ Long-range precision capability, combined with a wide range of delivery systems;
- ◆ Ability to produce a broader range of weapons effects;
- ◆ Advances in low observable technologies and the ability to mask friendly forces, and;
- ◆ Improvements in information and systems integration technologies.⁹

⁸ Joint Vision 2010, p. 11.

⁹ Ibid., pp. 11-13.

The full implication of these advances in technology on our armed forces is not yet clear. While "information warfare" certainly takes on added significance and has received much attention in recent years, these new technologies influence the full range of military operations. Improved precision and increased lethality allow smaller units to achieve objectives more rapidly, with less risk, and at greater range than before. The range of weapons effects provides increased flexibility to the operational commander and allows consideration of options other than the "destruction" of the enemy. Finally, improvements in information collection, processing and dissemination promise to reduce the "fog of war" and improve battlespace awareness.

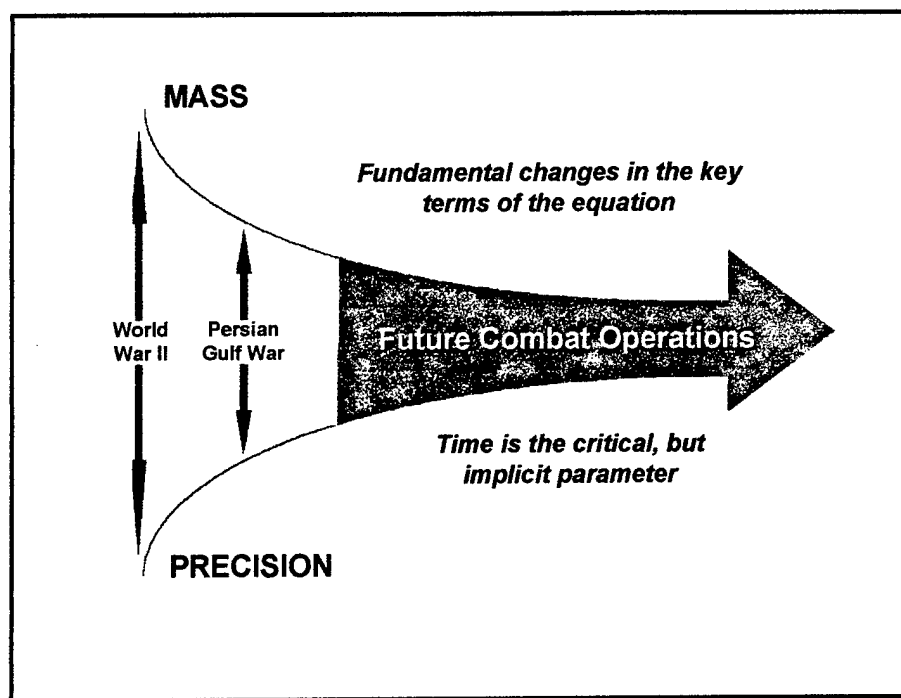
The De-Massification of Warfare

Alvin and Heidi Toffler first introduced the concept of "de-massification" as a means of describing the effects of information-based technologies on industry and society.¹⁰ A de-massification of warfare is also underway. We have already seen a shift from the massing of manpower in the nineteenth century toward a massing of firepower beginning in World War II. De-massification will continue as improvements in precision and weapons delivery systems reduce the volume of firepower needed to achieve objectives (see Figure 3). "Today one F-117, flying a single sortie and dropping one bomb, can accomplish what it took B-17 bombers flying 4,500 sorties and dropping 9,000 bombs to do during World War II, or 95 sorties and 190 bombs during Vietnam."¹¹

¹⁰ Toffler, *The Third Wave*, (New York: Bantam, 1980).

¹¹ Alvin and Heidi Toffler, *War and Anti-War*, (New York: Warner Books, 1993), p. 84.

Figure 3. The Changing Equation of Combat¹²



De-massification is not limited to “high-tech” arms of the military. Ground troops benefit as well. Advanced technology allows ground forces, particularly armor, to operate faster, more accurately and in a broader range of conditions than in the past. Night-vision devices, lasers, and computer-aided fire control systems now allow tankers to fire at targets while on the move, hit them at greater ranges and with a greater probability of success. Similar advances have given infantry troops lighter weapons, increased firepower, improved body armor, and enhanced communications.

Scale is decreasing in parallel with mass. Smaller forces carry more firepower and move faster than in the past. Today the U.S. Army still thinks in terms of a division (10,000-18,000) as the smallest combat unit capable of independent, sustained operations. Soon, if

¹² General John J. Sheehan, USMC. “Next Steps in Joint Force Integration,” *Joint Force Quarterly*, Autumn 1996, p. 47.

not already, a brigade of 4,000 to 5,000 troops will have the combat power of a full-size division and small, battalion or company-size units will be the equivalent of today's brigade.¹³

The implication of de-massification on the relationship between the operational and tactical levels of war is profound. Operational art gained its dominant role as a result of the "massification" of armies. Operational commanders of large-scale armies must concentrate the "big picture," the campaign vice the battle. Under this model the tactical commander enjoys a great deal of autonomy in the employment of his force but only within the framework laid out by the strategic and operational leadership. As the overall force gets smaller and tactical units gain increased firepower, will the tactical commander have the experience or the staff to plan for the big picture while simultaneously executing the details? Will a battalion commander be given the same degree of authority and responsibility currently afforded the division or corps commander?

Mass armies necessitate centralized planning and decentralized execution. There are just too many details and too many uncertainties for the operational commander to hold the reins too tightly. As the force gets smaller, however, and communications to and from the force improve, the number of details becomes more manageable and at least some of the uncertainties are reduced. The division commander, operating at the operational or operational-tactical level, used to manage three or four brigades each with three or four battalions; he now deals with a single brigade. The corps commander used to designing an operation involving many divisions finds himself with two or three brigades. The likely result is that the higher-echelon commander will retain certain decisions and responsibilities

¹³ Toffler, *War and Anti-War*, p. 89.

previously delegated to the tactical level commander. Alternatively, the tactical commander will be empowered to plan and coordinate actions currently in the domain of the operational level. In either case, the result is a merging of the tactical level of war into the operational level.

Operational Reach

Knowledge-based warfare not only allows smaller forces with greater firepower but also increases the "operational reach" of these forces.

Operational reach is the distance over which military power can be concentrated and employed decisively. Reach is influenced by geography surrounding and separating the opponents. It is extended by locating forces, reserves, bases and logistics forward, by increasing the range of weapon systems, and by improving transportation availability and the effectiveness of lines of communication and throughput.¹⁴

As the operational reach of units increases the level of war at which that unit (or weapon system) is employed typically falls higher in the hierarchy. For example, we seldom consider the "tactical" employment of the submarine-launched ballistic missile. Instead employment of an SLBM is considered to be strategic. This is not to say that tactics disappear from the employment of weapon. However, the role of tactics is diminished. The submarine commander is concerned with movement and maneuver to the launch position and with the defense of the launch platform.

A similar decrease in the significance of tactics is seen in the employment of sea-launched cruise missiles (e.g., TOMAHAWK). The weapon system is employed at the operational level of war with targeting decisions and launch times typically determined by

¹⁴ Joint Pub 3-0, p. III-16.

the theater or joint force commander. The commander of the actual launch platform, be it surface ship or submarine, has little control over the employment of the weapon system.

It seems likely that deployment of the Army Tactical Missile System (ATACM) will result in a similar decrease in tactical control. With a range of up to 300 kilometers (with GPS accuracy) and "smart" sub-munitions, the ATACM will allow a ground commander to target operational and strategic objectives previously out of "tactical" reach of artillery or even the multiple-launch rocket system (MLRS).¹⁵ This is a significant capability for the joint force and its use likely will be directed by the joint force commander. Again the tactical commander of the ATACM battery will have little say regarding target selection and timing of the attacks. In fact, even the ground force commander (battalion or brigade) may not have full control of this operationally significant weapon.

Symmetries and Asymmetries

De-massification also leads to an increase in asymmetry which in turn leads to an increased requirement for synchronization. "Symmetric engagements are battles between similar forces where superior correlation of forces and technological advantage are important to ensure victory and minimize losses."¹⁶ Typical examples include ground force against ground force, as in western Europe in World War I, or naval forces versus naval forces at the Battle of Jutland, for example. Asymmetric engagements or conflicts involve dissimilar forces—air versus ground, air versus naval, ground versus naval, etc. Asymmetric engagements are typically more lethal than symmetric engagements.

¹⁵ James F. Dunnigan, *Digital Soldiers*, (New York: St. Martin's Press, 1996), p. 55.

¹⁶ Joint Pub 1, *Joint Warfare of the Armed Forces of the United States*. (Washington, DC: 10 January 1995), p. IV-10.

Asymmetric force capabilities increase the risk to our own forces and increase the complexity of operations against our opponents. Advanced technologies, and subsequent increase in lethality, in the hands of an adversary emphasizes the importance of force protection. "Adaptations to this increasingly lethal battlespace will be warranted. These adaptations are likely to take the forms of increased stealth, mobility, dispersion and pursuit of a higher tempo of operations."¹⁷ Greater mobility and dispersion will increase the need for synchronization, traditionally a responsibility of the operational level commander. Consequently, the tactical level increasingly will take on operational level functions or be subsumed by higher-echelon command.

Future Models of Warfare

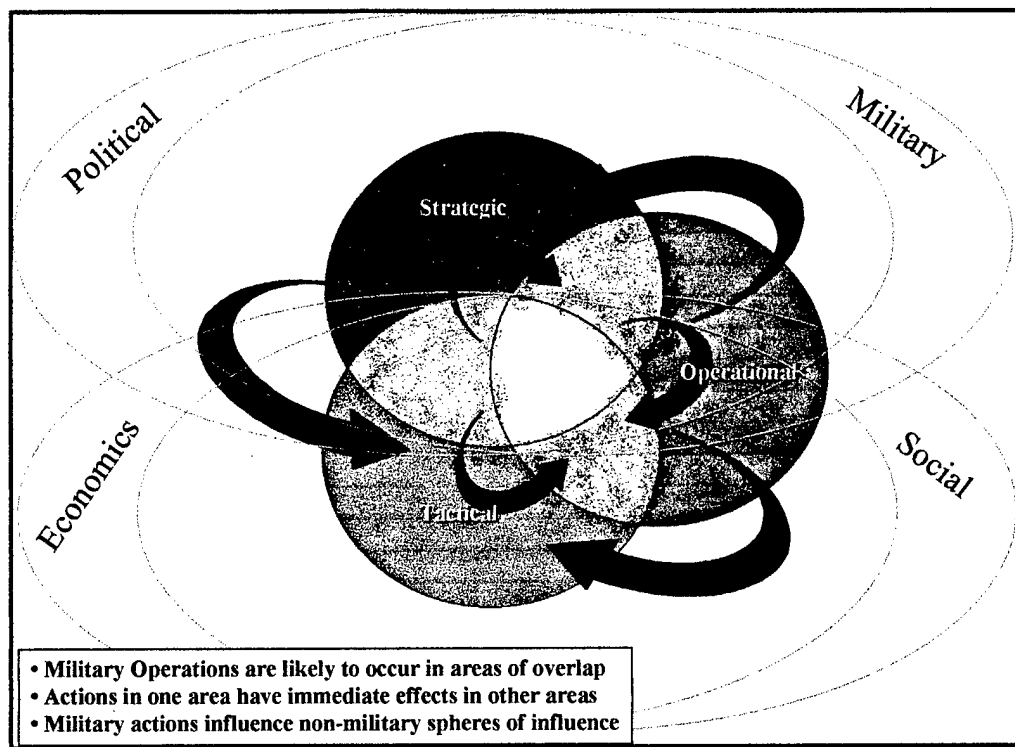
Knowledge-based warfare challenges much of the doctrinal underpinnings of war. It is "a departure from the attrition of enemy forces in a linear battlefield that emphasizes destruction of targets to a non-linear focus on effects and outcomes in and outside the battlespace."¹⁸ Advanced information age technology empowers individual warfighters and small tactical units, merging the traditional hierarchy of levels of war. In many cases, discrete tactical actions will be synchronized and combined with superior battlespace awareness to directly affect strategic objectives. Centralized planning, decentralized execution will be unable to adapt to the non-linear battlespace, where the consequences of every action influence not only the next action but quite possibly re-shape objectives. The linear, echelon oriented levels of war will cease to have real meaning. The hierarchical model, defining a linear relationship from strategy to operational art to tactical action, no

¹⁷ Joint Vision 2010, p. 14.

¹⁸ Caspar, p. 84.

longer matches reality on the battlefield. In fact, the definition of “war”¹⁹ itself requires revision as large-scale, sustained combat operations give way to simultaneous, discrete attacks across the entire spectrum of an enemy system.

Figure 4. Non-linear Model of War



The net effect is a compression of the hierarchy and a merging of the levels of war. Each level constantly interacts with all other levels and dimensions. Tactical, operational, and strategic military objectives intermingle with political, economic and social objectives. Actions taken against one immediately influence all others. Commanders used to operating within a narrowly defined hierarchy find themselves acting on multiple levels (strategic, operational, tactical) and in multiple dimensions (military, political, economic, social)

¹⁹ Joint Pub 3-0 defines war as the “conduct of large-scale, sustained operations to achieve national objectives or protect national interests.

simultaneously. The result is many parallel, vice sequential, actions and operations each interacting to influence the outcome of the others.

Conclusion

Advanced technology and knowledge-based warfare promise significant advantages to the force that fully utilize them. This will require flexible, adaptive planning and execution systems and a leveling of the traditional hierarchy of the warfare. Commanders will find themselves working on multiple levels simultaneously and contemplating single discrete actions aimed at strategic level objectives. This parallel planning and execution places a great demand on information systems and communications. The increased tempo of operations will require real-time monitoring, feedback and analysis of the effects of actions taken. This information must be available at all levels simultaneously to collaborative planning aimed at matching effects to strategic objectives. Finally, commanders at all levels will need to understand the strategic implications of their actions in an increasingly complex battlespace.

The linear hierarchy of strategy, operations, and tactics must be re-examined and adapted to accurately reflect the non-linear battlespace of the information age. A model must be adopted that accounts for the growing asymmetry of battle and accommodates the increasing operational reach of small, highly mobile and dispersed units. Until this new model of warfare is accepted, the advantages of knowledge based warfare will provide only incremental improvements to our force.

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